February 1, 2010

Marine Life Protection Act Initiative
c/o California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Re: External Array Proposal for the MLPAI North Coast Study Region

To the MLPA I-Team:

This narrative accompanies the Mendocino Ocean Community Alliance's proposed array; an array that is identical to the Tri-County Working Group, or "North Coast Local Interest" array submitted by Adam Wagschal.

We appreciate receiving analytical feedback on this array from the MLPAI Science Advisory Team regarding the array's ecological merits. Our constituents are particularly concerned about the potential for "effort shift" – i.e., the potential for newly established MPAs to shift harvesting impacts from one area to another, greatly increasing the pressure on marine resources previously subjected to minimal or sustainable harvesting levels.

We hope that additional scientific consultancy will be provided to assess the array's potential economic impacts: not simply "up to the dock" (e.g., EcoTrust data), but beyond the dock, as new MPAs will affect our larger business community. On the one hand, well-placed MPAs can provide vital protected habitat for native, rare, endangered, and economically important species. On the other hand, a single MPA could eliminate 80% of our crabbing fleet's fishing grounds; while the placement of a no-take zone within areas historically frequented by thousands of campground (State Park or private) or motel visitors could have a similar impact on our small coastal businesses.

We continue to be concerned about the lack of scientific attention paid to the potential socio-cultural impacts of the MPAs, especially to members of our community with deep, multi-generational ties to the coast and our marine resources. Residents of the North Coast Study Region have a unique and profound relationship to the ocean; a relationship that has not yet been fully recognized or honored by this process.

The unfortunate and costly contentiousness of the MLPAI in the North Coast Study Region (which could have been avoided) has necessitated a proactive approach to building cooperative and trustworthy relationships among different sectors of our community. MPAs that are established, quite literally, have the potential to both positively and negatively impact the lives, livelihoods, cultural identity and businesses of our neighbors, colleagues, friends, and families. In an area such as Mendocino County, this translates into an enormous amount of time spent listening and responding to stakeholders' concerns expressed both privately and publically, and coordinating small, informal gatherings to enable our diverse constituency to listen to each other in non-threatening arenas.

Yet our MOCA meetings and External Array Working Group sessions have served as opportunities for our community to learn from each other: we have heard testimony from sea urchin and abalone divers, salmon fishermen, crabbers, sport fishermen, and seaweed harvesters, and from biologists and kayakers, diving instructors and educators. We have a tremendous wealth of experiential knowledge within our community: knowledge that deserves to play a greater role in this process.

To that end, we look forward to increasing the quality of our interactions with the SAT and the BRTF, and to the newly formed Regional Stakeholders Group as our Region moves through the next stages of the MLPAI process.

Jeanine Pfeiffer

Jeanine Pfeiffer, PhD
Mendocino County MLPAI Outreach Program Facilitator

General Approach and Rationale Taken in Developing the MOCA Array

The Mendocino County Community Alliance (MOCA), with a constituency of over 100 members, **is the largest and most diverse community group** formed in response to the MLPA Initiative in the North Coast Study Region (NCSR). Due to demographic and historical reasons, our members' lives, livelihoods, and cultural identities are profoundly connected with our coastal and marine resources: our members include multi-generational Native American tribes, environmentalists, fishermen and processors, seaweed harvesters and processors, city officials, campground owners, divers, kayakers, researchers, biologists, educators, rangers, birders, guides, musicians, nature artists and artisans, beachcombers, and nature-lovers.

Most members of our community wear "multiple hats" and cannot be confined to one label: thus, each MPA proposed in our array takes into account multiple viewpoints and concerns. In Mendocino County, we have conservationists with academic degrees who fish and dive recreationally, business owners who routinely participate in beach and river clean-ups and restoration projects, and seafood providers who pushed for fishing regulations when there were none (e.g., sea urchins and abalone) and actively oppose destructive marine practices (such as offshore drilling). Our residents include a number of both federally-recognized tribes and non-federally recognized tribes, with distinct ancestral relationships with coastal marine resources.

MOCA's approach to developing the array focused on identifying areas that encompassed the highest range of unique habitat types while striving for the lowest potential negative impact to our native wildlife and our native human life. We recognize the importance of maintaining access for visitors, including tourists, students, and scientists. Yet our first priority is to ensure that our proposed MPAs are ecologically and economically viable while being easily monitored and enforced by our community in collaboration with invited scientists, and by designated State and Federal agencies.

The MOCA array was designed over a period of three months (Nov. 09 – Jan. 10) in consultation with our membership and participants in the Tri-County Working Group. **We estimate that over 1000 hours were spent in achieving consensus and hammering out the details** in formal and informal meetings, while our members attended and provided testimony to BRTF and SAT meetings on crucial decisions (e.g., ecologically unique characteristics of the NCSR, proposed bioregional divisions and Levels of Protection), poured over hundreds of pages of MLPAI documentation and relevant scientific articles, shared critical information (based on the first-hand knowledge of our most seasoned fishermen, divers and seaweed harvesters), trained ourselves in MarineMap, ground-truthed the proposed boundaries, solicited input from scientists, Department of Fish and Game personnel and State Park staff, brought in consultants who had participated actively in the South Coast and North Central Coast Study Regions, and critiqued the *Draft Regional Profile for the North Coast Study Region*.

The narrative accompanying our array in Marine Map is most highly developed for seven proposed MPAs located in the area encompassed by Punta Gorda to the North and Pt. Arena to the South. These seven MPAs are contained within the larger Tri-County Working Group, or "North Coast Local Interest" array.

To recognize and honor our Mendocino County Native American tribes, within each of our proposed MPAs we have inserted the following phrase: "*It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands*." **We echo the statement made by the North Coast Tribal Coalition**, as stated below:

"Tribal Indigenous Peoples have inhabited the Pacific North Coast since time immemorial and continue to rely on the coast and the ocean for a variety of customary uses, including but not limited to subsistence harvesting and gathering of marine life; and spiritual, ceremonial and other traditional cultural activities. These uses and activities are undertaken pursuant to aboriginal rights founded in federal law, which the State of California is obligated to respect and protect. As an intrinsic part of the ecosystem, Indigenous Peoples have been and continue to be responsible stewards of the environment. Traditional ecological and cultural knowledge forms

the basis of sustainable management by Indigenous Tribal peoples of the North Coast Region. Due to the nature, methods, and amounts harvested, the take of marine species by Indigenous Peoples is minimal.

Each of the North Coast Tribes is a distinct sovereign nation and each has identified certain areas in the North Coast Region where traditional customary uses and cultural activities are carried out. Furthermore, each federally-recognized Tribal Nation retains a government-to-government relationship with the Federal government. In implementing the MLPA, the Initiative should likewise engage in government-to-government consultations to address Tribal concerns. There are also federal trust responsibilities that are based on the unique legal relationship between the United States and recognized Indian Tribes. In the spirit of these responsibilities, the State of California should ensure that the preferred alternative for MPAs in the North Coast Region contains provisions recognizing and protecting traditional customary and cultural uses of Indigenous Peoples in the areas identified as such by the Tribes. Sustainable harvesting and gathering is a key principle in cultural and ecological preservation, and it is fully consistent with the goals and purposes of the Marine Life Protection Act. Moreover, as Tribes in California have never ceded their aboriginal rights to continue to harvest and gather from the marine environment, the State should recognize those uses and ensure that the regulations adopted as part of the MLPA process do not infringe upon them in any manner, unless expressly authorized by the affected Tribe."

Description of How the Array Meets the MLPA Goals

The relevance of our array to MLPA Goals 1-6 is stated in the information boxes associated with each proposed MPA in MarineMap. We have paid particular attention to enforceability. We are proposing MPAs with:

- exceptionally high ecological habitat representation (*Ten Mile SMR, Pyramid Point SMR*)
- high vertical niche habitat (due to deep marine canyons and rocky shores) and invertebrate diversity (*Punta Gorda SMR, Pt. Cabrillo SMR and SMCA*);
- high importance as breeding and rearing grounds for salmonids, flatfish, surf perch, herring, lampreys, tidewater gobies, gaper clams, and crabs (*Ten Mile Estuary SMR, Navarro River SMR, Humboldt Bay SMRMA*)
- high importance as feeding, nesting, and haul-out habitat for pinnipeds, seabirds, and other waterfowl and coastal wildlife (*Humboldt Bay SMRMA, Eel River SCMA*).

We are particularly enthusiastic about the potential for a side-by-side comparative study of the ecological impacts of excluding sea urchin harvests in areas with low natural predator pressure; this study would involve the proposed Pt. Cabrillo SMR and SMCA, involving an area subject to no sea urchin harvesting for over 35 years.

We are concerned, however, with the lack of recognition of biocultural complexity in the MLPA Master Plan, the lack of adequate social science expertise on the Science Advisory Team, and the apparent lack of socio-cultural analytical methods to be applied in evaluating the MPAs.

Research has demonstrated that biological and cultural diversity are intrinsically connected – as demonstrated by the scientific term *biocultural diversity*. Protecting cultural Heritage is not just about preserving the ability to kayak, photograph, or walk along the beach. The knowledge base, livelihoods, traditions, and cultural identities of coastal communities are tightly interwoven with our coastal and marine resources. Cultural heritage involves deep and long-term relationship sto oceanic resources embodied in the millennia-old cultural practices of Northern California tribes and multi-generational fisheries.

The MLPA treats marine resources as if they were divorced from a cultural context. The MLPA goals do not point to the need for conserving cultural heritage, or to improve the cultural opportunities provided by marine ecosystems. **For all these reasons, our proposed MPAs go beyond the stated MLPA goals, in an attempt to hold the State of California to a higher conservation standard: one that protects both biological and cultural diversity.**

MOCA External Array List of Contributors*

Dirk Ammerman, *sea urchin diver*
Jim Bassler, *commercial nearshore fishing, Salmon Troller's Marketing Association*
Carson Bell, *sea urchin diver*
Craig Bell, *recreational fishing*, *President, Mendocino County Fish & Game Advisory Commission*
Dave Bitts, *commercial fishing*
Adam Bremer, *sea urchin diver*
Autumn Bremer, *sea urchin processor*
Eileen Broderick, *general public*
Bruce Campbell, *manager, Albion River Campground*
Tony Cannia, *commercial fishing*
Mike Carpenter, *sea urchin, Albion Harbor Regional Alliance*
Kevin Collins, *recreational fishing*
T.J. Colvin, *recreational fishing*
Russ Crabtree, *Smith River Rancheria*
Don Cruser, *educator*
Meg Courtney, *Fort Bragg City Council*
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Tomas DiFiore, *seaweed harvester, Albion Harbor Regional Alliance*
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Greg Grantham, *College of the Redwoods, Marine Biology Instructor*
Terry Gross, *Deputy Counsel, County of Mendocino*
Doug Hammerstrom, *Mayor, City of Fort Bragg*
Liz Haapanen, *member of the public*
Frank Hartzell, *reporter, Fort Bragg Advocate-News*
Bill Heil, *Conservation First, Sierra Club*
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Patrick Higgens,
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Allan Jacobs, *Point Arena recreational fishing, NCC stakeholder*
Robert Jamgochian, *School of Natural Resources (SONAR), Mendocino High School*
Bob Juntz, *sea urchin processor*
Tim Klaussen, *recreational fishing*
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William Lemos, *Conservation First, NRDC, Mendocino Abalone Watch, Mendocino Volunteer Fire Dept.*
Christopher Stuart Lloyd, *general public, former sea urchin boat owner*
Charles Lorenz, *recreational abalone diver*
Sonny Maas, *commercial fishing*
Jim Martin, *recreational fishing*
Jim Mastin, *5th District Candidate, Mendocino Board of Supervisors*
Dennis Mayo, *Open Beaches & Trails*
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Kevin McGrath, *recreational fishing*
Jere Melo, *Fort Bragg City Council*

(List continued on the following page)

(List continued from the previous page)

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Bill Osborne, *Reverend of St. Michael's & All Angels Episcopal Church*
Linda Perkins, *Conservation First, Sierra Club*
Jeanine Pfeiffer, *researcher, UC Davis, Society for Conservation Biology*
Ben Platt, *commercial fishing*
Dan Platt, *commercial fishing*
Gabriel Quinn Maroni, *general public*
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Alan Sansano, *NorCal Kayak Fishing Association*
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Brian Shaw, *sea urchin diver*
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Ron Sommer, *recreational fishing*
Lucy Stanley, *Noyo River Indian Community*
Randy Thorton, *charter vessel operator*
Judy Trumper, *sea urchin processor*
Tom Trumper, *sea urchin processor*
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Mark Taylor, *recreational fishing*
Todd VanHerpe, *oyster aquaculture*
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Mary Walsh, *Conservation First, Sierra Club*
Bill Watson, *member of the public*
Beth Werner, *Humboldt Baykeeper*
Dave Wright, *fisheries biologist, kayaker, surfer*
Dan Yoakum, *commercial fishing*
Mike Zamboni, *commercial fishing*

*Note: this list includes persons who actively participated in commenting on our arrays at general MOCA meetings, at External Working Array Group meetings, and/or the Tri-County Working Group meetings. Contact information is not provided on an individual basis, as our contributors as a whole did not feel comfortable with sharing this personal data.

Groups and Associations:

Albion Harbor Regional Alliance
California Fisheries Coalition
California Sea Urchin Commission
College of the Redwoods – Mendocino Branch
Humboldt Area Saltwater Anglers
Mendocino Abalone Watch
Mendocino County Fish and Game Advisory Commission
Northern California Kayak Fishing Association
North Coast Fishing Association
Ocean Protection Coalition
Recreational Fishing Alliance
Salmon Restoration Association
Salmon Trollers Marketing Association
Seaweed Stewardship Alliance
Sonoma County Abalone Network
Students for Environmental Action (SEA), School of Natural Resources, Mendocino High School

California Marine Life Protection Act Initiative
MLPA North Coast Study Region: Round 1 Evaluations
Staff Summary of Area and Habitats in External Proposed MPA Array B
Date Created: March 5, 2010

Table 1. Summary of MPAs by Designation for External Proposed MPA Array B

Type of MPA[a]	# of MPAs	Area (mi^2)	% of Study Region
State Marine Reserve (SMR)	7	60.77	5.9%
State Marine Recreational Managed Area (SMRMA)	1	1.84	0.2%
State Marine Park (SMP)	0	0.00	0.0%
State Marine Conservation Area (SMCA)	4	25.68	2.5%
All MPAs combined	12	88.29	8.6%

[a] These are proposed marine protected area (MPA) designations, NOT levels of protection assigned by the MLPA Master Plan Science Advisory Team (SAT). SMRMA is not an MPA designation, but rather a marine managed area designation.

Table 2. Summary of MPAs by Level of Protection for External Proposed MPA Array B

Level of Protection (LOP)	# Proposed	Area (mi^2)	% of Study Region
Very High[b]	8	62.61	6.1%
High	0	0.00	0.0%
Moderate-High	3	25.39	2.5%
Moderate	0	0.00	0.0%
Low[c]	1	0.29	<0.1%
Total	12	88.29	8.6%

[b] The "Very High" category includes MPAs with SMR designation, as well as SMRMA designations.

[c] The "Low" category groups together MPAs that are assigned a moderate-low and low level of protection.

Table 3. Individual MPAs in External Proposed MPA Array B

MPA Name	Size[d] (mi^2)	Alongshore Span[e] (mi)	Depth Range[f] (ft)
Pyramid Point SMR[g]	21.28	4.7	0 - 124
Reading Rock SMR	10.56	2.3	90 - 245
Reading Rock SMCA[g]	9.52	3.0	0 - 101
Humboldt Bay SMRMA	1.84	N/A	Depth data not available
Eel River SMCA[g]	13.20	3.7	0 – 120
Punta Gorda SMR[g]	19.48	5.0	0 – 1667
Ten Mile SMR[g]	8.81	2.3	0 – 335
Ten Mile Beach SMCA[g]	2.67	0.7	0 - 288
Ten Mile Estuary SMR[g]	0.19	N/A	Depth data not available
Point Cabrillo SMCA[g]	0.29	0.5	0 - 23
Point Cabrillo SMR[g]	0.30	0.7	0 - 40
Navarro River Estuary SMR[g]	0.14	N/A	Depth data not available

[d] Statue mile is the unit of measurement used for this analysis.

[e] Alongshore span measured as direct line from one end of the MPA to the other, roughly paralleling the coastline. An alongshore span is not calculated for estuarine MPAs

[f] Comprehensive bathymetric data for all estuaries is not available. Though bathymetric data do exist in portions of some estuaries, depth ranges are not provided for estuarine MPAs for consistency in evaluations.

[g] Tribal uses are proposed in this MPA. However, pending further policy guidance, these uses are not currently considered in assigning the level of protection for this MPA.

Table 4. Habitat Representation in External Proposed MPA Array B

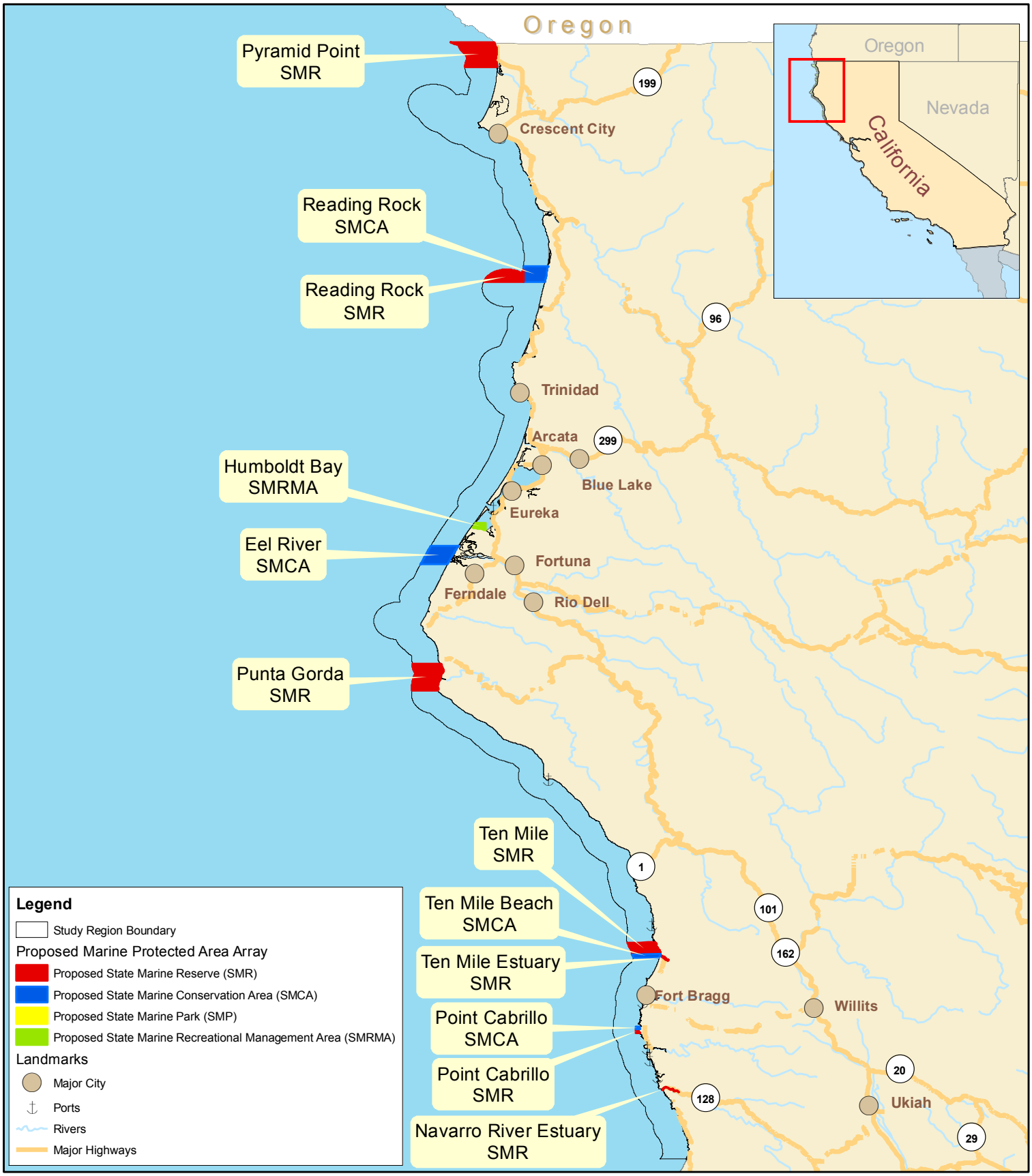
	SMR		SMRMA		SMP		SMCA		Total MPAs	
Habitat[h]	Area	%	Area	%	Area	%	Area	%	Area	%
Intertidal										
Sandy or gravel beach*	9.30	5%	0.00	0%	0.00	0%	7.54	4%	16.84	9%
Rocky shores*	11.03	7%	0.28	<1%	0.00	0%	1.97	1%	13.28	8%
Hardened shores*	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
Coastal marsh*	2.94	3%	1.90	2%	0.00	0%	0.00	0%	4.84	5%
Coastal marsh	0.06	2%	0.04	1%	0.00	0%	0.00	0%	0.10	3%
Tidal flats*	0.36	1%	0.98	1%	0.00	0%	0.00	0%	1.34	2%
Seagrass beds										
Humboldt Eelgrass	0.00	0%	0.57	8%	0.00	0%	0.00	0%	0.57	8%
Estuarine										
Estuary	0.33	1%	1.84	4%	0.00	0%	0.00	0%	2.17	5%
Hard bottom										
0-30 meters proxy*[,i]	3.10	6%	0.00	0%	0.00	0%	0.00	0%	3.10	6%
0-30 meters	2.53	6%	0.00	0%	0.00	0%	0.12	<1%	2.65	6%
30-100 meters	1.63	4%	0.00	0%	0.00	0%	0.00	0%	1.63	4%

	SMR		SMRMA		SMP		SMCA		Total MPAs	
Habitat[h]	Area	%	Area	%	Area	%	Area	%	Area	%
100-200 meters	0.23	23%	0.00	0%	0.00	0%	0.00	0%	0.23	23%
>200 meters	0.05	52%	0.00	0%	0.00	0%	0.00	0%	0.05	52%
Soft bottom										
0-30 meters proxy*, [i]	9.48	6%	0.00	0%	0.00	0%	3.72	2%	13.20	8%
0-30 meters	17.82	7%	0.00	0%	0.00	0%	8.47	3%	26.28	10%
30-100 meters	27.10	6%	0.00	0%	0.00	0%	1.97	<1%	29.07	7%
100-200 meters	3.07	5%	0.00	0%	0.00	0%	0.00	0%	3.07	5%
>200 meters	2.40	31%	0.00	0%	0.00	0%	0.00	0%	2.40	31%
Unknown										
0-30 meters proxy*, [i]	0.00	0%	0.00	0%	0.00	0%	3.77	20%	3.77	20%
0-30 meters	5.63	3%	1.84	1%	0.00	0%	14.10	9%	21.56	13%
30-100 meters	0.30	1%	0.00	0%	0.00	0%	1.03	4%	1.33	5%
100-200 meters	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
>200 meters	0.02	10%	0.00	0%	0.00	0%	0.00	0%	0.02	10%
Other										
Offshore rocks*	7.53	5%	0.00	0%	0.00	0%	0.89	1%	8.42	6%
Linear kelp*	2.55	5%	0.00	0%	0.00	0%	0.45	1%	2.99	6%

[h] Note: Habitats are measured as an area (mi^2) except for those with a * notation. Habitats with a * notation are expressed in linear units (mi).

[i] There is limited fine scale data for nearshore habitat, shallower than 10-20 meters depth, in the north coast study region. A proxy for this area was created using a line parallel to the coast and classifying the substrate as either hard or soft substrate depending on the dominant habitat type for the 0-30 meter depth zone in that area based on available fine-scale substrate data, shoreline type, kelp abundance, and expert knowledge.

MLPA North Coast Study Region
Round 1- North Coast External Proposed MPA Array B



California Marine Life Protection Act (MLPA) Initiative

0 5 10 20 Nautical Miles
0 5 10 20 Statute Miles
0 5 10 20 Kilometers

N

Projection Information:
Name: NAD 1983 California Teale Albers
Projection: Albers
Datum: North American 1983

Printing Date: February 16, 2010
Created by Marine Map Cartographic Division, UCSB.
For more information, visit http://www.northcoast.marinemap.org/marinemap/

Disclaimer:

This map represents a proposed external marine protected area (MPA) array that has been submitted by a north coast community group or groups for consideration in the MLPA planning process. This external MPA array is under review; it is NOT a recommendation to the California Fish and Game Commission.

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array B
Document Created February 4, 2010

Name of Array: North Coast External Proposed MPA Array B (ExB)
Author: Mendocino Ocean Community Alliance (MOCA)

Bioregions:
Northern: Oregon/California border to Mattole River
Southern: Mattole River to Alder Creek near Point Arena

Total number of MPAs:	**12**
Number of SMRs:	7
Number of SMCAs:	4
Number of SMPs:	0
Number of SMRMAs:	1
Number proposing tribal uses	10

MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Pyramid Point SMR	73881	Northern Bioregion	MPA boundaries: North: 42 00.000 minutes (Oregon Border state waters boundary) West: State waters boundary South: 41 56.000 minutes East: Mean high tide line to beach not including any part of Smith River	SMR	Very high	Yes	Take of all living marine resources is prohibited.	Traditional Tribal subsistence and ceremonial uses shall be allowed.
Reading Rock SMR	73883	Northern Bioregion	MPA boundaries: North: 41 24.000 minutes to state water lboundary (Extension of inland MPA) then following state water boundary. West: Following state water line South: 41 21.400 minutes North East: 124 08.000 minutes (West boundary of Inland MPA)	SMR	Very high	No	Take of all living marine resources is prohibited.	None specified

SMCA=state marine conservation area SMP=state marine park SMRMA=state marine recreational management area SMR=state marine reserve TBD=to be determined
** Levels of protection assigned do not take into account proposed Tribal uses.*

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array B
Document Created February 4, 2010

MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Pyramid Point SMR	N/A	The Pyramid Point SMR is proposed by the Del Norte MPA Work Group and based on the following Goals: G1,G2,G3,G4,G5,G6. Protects a diversity of habitats from the Oregon Border to the Smith River, seaward to federal waters. Includes rocky shores, beaches, shallow reef, soft bottom, and kelp forest habitats, a large off-shore island (Prince Island), and several off-shore rocks important for sea bird colonies and waterfowl (Aleutian geese). The reserve will enhance protections for marine mammals and Chinook salmon, steelhead and coastal cutthroat trout, and Threatened southern Oregon/Northern California Coastal Coho stocks, and protect kelp forest, red tail surf perch, smelt, nearshore rockfish, red abalone, razor clams and Dungeness crab.	Provides clear and enforceable boundaries with abundant coastal road, highway and trail access and vantage points. Provides vessel access (Port of Brookings, OR) for study or enforcement. Reduces distance from Crescent City to fishing grounds and improves safety of Crescent City fishers. Reduces economic impacts to sport and commercial fisheries in California's highest poverty level area. This SMR is clustered with the Pyramid Point SMCA and designed to recognize Native American traditional tribal shore uses that have occurred for thousands of years. Traditional Native American uses of this area, including subsistence and ceremonial shore use, have occurred since time immemorial and those uses are considered de minimis.
Reading Rock SMR	N/A	Combined with the Reading Rock SMCA, this reserve protects diverse habitats including beaches, soft and hard bottom habitats. Note that anecdotal accounts indicate more rocky habitat present than is depicted in MarineMap. This will be assessed in the near future. Contributes to goals 1-6 of the MLPA.	None specified

SMCA=state marine conservation area SMP=state marine park SMRMA=state marine recreational management area SMR=state marine reserve TBD=to be determined
** Levels of protection assigned do not take into account proposed Tribal uses.*

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MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Reading Rock SMCA	73882	Northern Bioregion	MPA boundaries: North: 41 24.000 minutes (Approximation of parking lot at end of road) West: 124 08.000 minutes (Approximation of 3nm state water boundary) South: 41 21.400 minutes (Approximation of Lagoon and Creek entrance) East: Mean high tide line	SMCA	Moderate high	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of Dungeness crab by hoop net; Dungeness crab by diving; and Dungeness crab by trap. 2. The commercial take of Dungeness crab by trap.	Traditional Tribal subsistence and ceremonial uses shall be allowed.
Humboldt Bay SMRMA	73884	Northern Bioregion	MPA boundaries: These boundaries are all inside Humbolt Bay. North: 40 42.700 minutes West: Mean high tide line South: Mean high tide line East: 124 14.100 minutes (Wilderness area boundary)	SMRMA	Very high	No	Take of all living marine resources is prohibited.	Hunting shall be permitted.
Eel River SMCA	73885	Northern Bioregion	MPA boundaries: North: 40 39.000 minutes West: State waters boundary South: 40 36.000 minutes East: Mean high tide line to beach not including any part of the Eel River)	SMCA	Moderate high	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of Dungeness crab by hoop net; Dungeness crab by diving; and Dungeness crab by trap. 2. The commercial take of Dungeness crab by trap.	Allows traditional tribal uses.

SMCA=state marine conservation area SMP=state marine park SMRMA=state marine recreational management area SMR=state marine reserve TBD=to be determined
** Levels of protection assigned do not take into account proposed Tribal uses.*

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Document Created February 4, 2010

MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Reading Rock SMCA	N/A	Combined with the Reading Rock SMR, this SMCA protects diverse habitats including beaches, soft and hard bottom habitats. Note that anecdotal accounts indicate more rocky habitat than is depicted in MarineMap. This will be assessed in the near future. Contributes to goals 1-6 of the MLPA.	None specified
Humboldt Bay SMRMA	N/A	The MPA contains a significant proportion of Humboldt Bay's eelgrass. The Humboldt Bay Harbor District has an ongoing eelgrass monitoring program in Humboldt Bay and would expand that program to include this MPA if adopted. Comparison of this MPA with other areas would allow for a meaningful comparison of areas where clamming is allowed verses restricted.	None specified
Eel River SMCA	N/A	This unique location attracts feed for numerous pinnipeds,porpoise, whales, birds, and fish like salmon. The combination of river mouth with a nearby canyon make this a food factory with lots of krill and small fish present for much of the year.	This SMCA is a little south of the river mouth to avoid most of the recreational salmon fishing which occurs here.

SMCA=state marine conservation area SMP=state marine park SMRMA=state marine recreational management area SMR=state marine reserve TBD=to be determined
** Levels of protection assigned do not take into account proposed Tribal uses.*

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array B
Document Created February 4, 2010

MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Punta Gorda SMR	73879	Northern Bioregion	The Northern Boundary = 40 20'N (The Brothers Rock formation) The Southern Boundary = 40 15.7' (Gorda Rock)	SMR	Very high	Yes	Take of all living marine resources is prohibited.	All species protected. It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands.
Ten Mile SMR	73878	Southern Bioregion	Southern Boundary: 39.33.3 Northern boundary: 39.35.2 out to the 3-mile limit (Moving the boundary north would eliminate the only feasible public access between Seaside Beach and Westport.)	SMR	Very high	Yes	Take of all living marine resources is prohibited.	It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands. Retrieval of recreational and commercial crab traps permitted. Removal of invasive species permitted.

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California MLPA North Coast Study Region
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MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Punta Gorda SMR	N/A	Expansion of existing MPA. Protects special habitat for rare blue coral and other unique marine species. Protects Mattole River plume. Deep marine canyon habitat, spawning and aggregation for anadromous fish (coho, steelhead and Chinook), seabird foraging. Extensive habitat representation in deeper water, more vertical habitat (only misses 1 habitat type that is present in the region: kelp because soft bottom 200+m is not available in the entire study region), the only proposed MPA in this region to do so. It has a variety of diverse habitats including upwelling zones, submarine canyons, reef structures, and improves study opportunities provided by marine ecosystems that are subject to minimal human impacts.	Captures off-shore marine canyons on both sides of the bio-regional split. Meets or exceeds sizing guidelines and spacing criterion. This is a preferred alternative to the proposed Big Flat or Usal areas which would be devastating to the local crab industry. The southern boundary was set to preserve important fishing grounds for the Pacific halibut fishing fleet from Shelter Cove, and lines up with a onshore rocky point that facilitates enforcement. Minimal negative impacts on live fishing, sea urchin, abalone, and seaweed harvesting and recreational kayaking. Moderate impacts to nearshore fishing originating from visitors to the Mattole Beach BLM campground.
Ten Mile SMR	N/A	This area contains one of the widest possible ranges of habitat representation. This MPA has great diversity in unique marine habitats including; exposed high energy rocky shoreline, sand and gravel beaches, offshore islets, surf grass, kelp beds, hard and soft substrates, while interfacing with the complex estuarine habitats consisting of eelgrass beds, marshlands and mudflat ecosystems. This SMR helps maintain biodiversity in fish, invertebrates, seabirds and marine mammals associated with the protection of the ecosystem. Protects a spawning aggregation area of steelhead, coho and Chinook salmon.(G1, G2,G3) The area includes pinniped haul-outs and critical nesting and breeding bird habitat, including the endangered snowy plovers. This area includes a portion of the MacKerricher State Park Ingelnook Fen-Ten Mile Dunes Natural Preserve. Beach access increases the feasibility of enforcement.	Socio-economic impact: significant negative impact to the sea urchin industry (estimated $200,000 gross), moderate negative impact on live fishing and crabbing; potential negative impact on seaweed harvesting due to effort shift if other areas are closed to harvesting; minimal impact on abalone harvesting. Placing this reserve 41 miles N of the Pt. Arena SMR minimizes the cumulative effects of effort shift for all commercial, recreational, and subsistence fishing and seaweed harvesting, that would otherwise take place if an MPA was sited within the [preferred] 31-mile spacing guidelines (e.g., at Noyo Harbor). This MPA is adjacent to the mouth of the Ten Mile estuary (proposed SMR). Located at the North end of this MPA is an established marine monitoring site, that along with numerous coastal access points makes it easy for research, recreation and enforcement possible. (G5) This MPA is clustered with an adjacent Ten Mile SMR. (G1,G3, G3)

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California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array B
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MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Ten Mile Beach SMCA	73880	Southern Bioregion	39.33.3 northern boundary (first washrock north of the Ten Mile River mouth 39.32.7 southern boundary	SMCA	Moderate high	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of Dungeness crab by trap. 2. The commercial take of Dungeness crab by trap.	No wave energy projects or oil exploration/leases. It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands.
Ten Mile Estuary SMR	73874	Southern Bioregion	Estuary extends from the mouth of Ten Mile River to an area upstream of approximately 1.7 miles.	SMR	Very high	Yes	Take of all living marine resources is prohibited.	No waterfowl hunting. It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands. Retrieval of recreational and commercial crab traps permitted. Removal of invasive species permitted.

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MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Ten Mile Beach SMCA	N/A	Adds protection for soft bottom habitat to the adjacent SMR proposed to the north. Connects the estuarine reserve to the offshore SMR while allowing for commercial and recreational crabbing. Serves as an enforcement "buffer" for the "Randy's Rock" Reserve - a kind of "warden's rumble strip" as vessels approach the SMR.	Extremely important crabbing area for the private recreational and commercial passenger fishing vessel fleet out of Fort Bragg; closing the area to crabbing would have a significant negative economic impact.
Ten Mile Estuary SMR	N/A	Estuary protection (Goals 1-5) Estuaries not only support local fish and shellfish populations that are harvested commercially and recreationally, but these waters also serve as spawning and nursery grounds for populations that are harvested offshore. Estuaries rank along with tropical rainforests and coral reefs as the world's most productive ecosystems, more productive than both the rivers and the ocean that influence them from either side. Supports current DFG coho and steelhead salmon habitat conservation projects while protecting essential habitat for federal and state listed threatened anadromous fish including coho, Chinook and steelhead salmon. Habitat for osmoregulation and acclimation for critical life phases of anadromous fish; important transportation corridor for adult salmon spawners; rearing habitat for juvenile salmonids, rockfish, flatfish, surf perch, herring,tidewater gobies, gaper clams, crab and other species; habitat for smoltification of juvenile salmonids;	The area is adjacent to the MacKerricher State Park Ingelnook Fen Ten Mile Dunes Natural Preserve.

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MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Ten Mile Estuary SMR (continued)								
Point Cabrillo SMCA	73877	Southern Bioregion	Southern boundary = 39 21.209' Northern boundary = 39 21.648' Western boundary = 123 50' From a visible landmark at the south Caspar Headlands, to include all of Frolic Cove, an important archaeological site. The existing Point Cabrillo SCMA bisects this cove, making it difficult to enforce.	SMCA	Moderate low	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of red abalone by free-diving. 2. The commercial take of urchin by diving.	It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands.

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MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Ten Mile Estuary SMR (continued)		migratory corridor for spawning lampreys.(G2) All species protected. Prime shorebird and waterfowl habitat; feeding area for pinnipeds; critical habitat and transportation corridor for river otters. This SMR protects larval source and enhance reproductive capacity of numerous invertebrate species such as dungeness crabs, clams, ghost shrimp, eel grass etc. (G1, G2, G4); and expands on long-term protections for complex estuarine habitats, including eelgrass beds, marshlands and mudflat ecosystems.(G1, G2) Almost the entire stretch of this array is close to population centers, with numerous coastal access points making it easy for research, long- term monitoring, recreation and enforcement. (G3, G5)	
Point Cabrillo SMCA	N/A	This area includes a cluster of emergent rocks that are locally known as a marine mammal haul-out and foraging area, especially for Stellar's Sea Lion, and seabirds including pelican and cormorant species. Allows for research opportunities to study the ecosystem relationships between abalone, sea urchins, and understory canopy and benthic layer turf algae. Side by side with an SMR, the biodiversity abundance and distribution can be compared with an adjacent conservation area (SMR) that allows harvest of both abalone and sea urchin. (G3) This study area will additionally provide a opportunity to study the relationship between understory canopy and benthic layer turf algae. This area contains underwater archaeological artifacts in Frolic Cove that are currently inadequately protected by the existing reserve boundaries.	Easy access for research. This has area is part of a larger area closed to sea commercial urchin harvest since 1992(?). Ongoing studies occur here. By reopening this area to recreational abalone harvest and commercial and recreational sea urchin harvest, biologists can learn about how the adjacent area (Pt. Cabrillo SMR) replenishes an adjacent fished area. For the SMCA, potential negative socio-economic impacts could be incurred on near-short live fishing and the coastal culture of our communities. If the SMCA is open to sea urchin harvesting, it will have a positive impact on that industry and the families and local businesses this industry supports. We are not drawing the line further north because of the importance of this area to local campgrounds, kayakers, and other recreational users. (G3, G5) The area has good shore-based access for educational and recreational users with a stairway leading down from the Pt. Cabrillo Light Station State Park Only allow the take of urchin and abalone for studies of adaptive management.

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California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array B
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MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Point Cabrillo SMR	73876	Southern Bioregion	Southern boundary = 39 20.606' Northern boundary = 39 21.209' Western boundary = 123 50'	SMR	Very high	Yes	Take of all living marine resources is prohibited.	It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands.
Navarro River Estuary SMR	73875	Southern Bioregion	Mouth of the Navarro River to 3.450 miles inland in estuary waters seasonally affected by the tidal influence.	SMR	Very high	Yes	Take of all living marine resources is prohibited.	It is not the intention of the array proponents to prohibit traditional native tribal access, harvest, or uses, or to interfere with their sovereignty on their ancestral lands. Retrieval of recreational and commercial crab traps permitted. Removal of invasive species permitted. Vessels permitted.

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California MLPA North Coast Study Region
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MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Point Cabrillo SMR	N/A	This area is currently an SMCA that allows for commercial fin-fishing and seaweed harvest. The proposed SMR contains high-quality invertebrate habitat (G1, G2) and has been closed to commercial and recreational take of invertebrates since 1975, and the area was also closed to recreational take of finfish while allowing commercial take of finfish. This SMR would replace the existing Pt. Cabrillo SMCA and make the boudaries more feasible. Local biologists say this area is large enough to conduct studies on sea urchins and abalone. Along with the adjacent SMCA to the north, this cluster will provide side by side study opportunity of a no-take zone and an area of sustainable harvests of abalone and urchins. (G3)	Increases feasibility using easily distinguishable landmarks. Adjacent to a state park for recreational non-extractive activities such as scuba diving. Very accessible for research. Maintains a long time series of data from previous studies. We have proposed to local tribal councils that they adopt these regulations for their members, but pending government-to-government consultations, any regulations affecting tribal members must be passed by both the California Fish & Game Commission and the tribal councils concurrently, similar to the creation of a State Marine Park. This is a perfect area for study that could allow for the development of adaptive management, and collaborative research with the local fishing community, biologists and the tribes. Because the commercial nearshore fleet has been voluntarily not fishing in this area, and seaweed harvesters have not been gathering her, we do not anticipate a negative socio-economic impact on the commercial near-shore fishing or sea urchin industries, but we have a concern for seaweed harvesters if other areas are closed to them.
Navarro River Estuary SMR	N/A	Estuary protection (Goals 1.2.3.4 & 6) Protects communities associated with areas of diverse estuarine habitats including open channels, mud flats, eel grass beds, etc. Anadromous fish refugia: habitat for osmoregulation and acclimation for critical life phases of anadromous fish; important transportation corridor for adult salmon spawners; provides rearing habitat for juvenile salmonids, rockfish, flatfish, and tidewater gobies and habitat for smoltification of juvenile salmonids; migratory corridor for spawning lampreys. All species protected. Prime shorebird and waterfowl habitat; feeding area for pinnipeds; critical habitat and transportation corridor for river otters. Although not required in the scientific guidelines, adoption of this SMR will enhance the ecological productivity of the surrounding marine ecosystem.	Recreational kayaking and canoeing destination. Close proximity to Navarro Beach Campground [part of the Navarro River Redwoods SP] and shorebird and mammal viewing. Easily accessible to the public; no negative socio-economic impact on fishing, sea urchin or seaweed harvesting industries or related businesses.

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California Marine Life Protection Act Initiative
North Coast Study Region
Consideration of Existing Marine Protected Areas
Revised January 12, 2010

Please indicate how each to the five existing marine protected areas (MPAs) in the MLPA North Coast Study Region listed below should be addressed. You may propose that the existing MPA be retained without change, be retained with changes to either the boundaries or regulations, or removed. Please also describe the rationale for your proposed action in the space provided. For your reference, the existing regulations and boundaries for these MPAs are included in Tables 1 and 2.

Existing MPA	**Retain** (no changes to boundaries or regulations)	**Modify** (included with boundary or regulation change)	**Remove** (not included)	**Rationale for Decision**
Punta Gorda SMR		Modified and expanded into SMR		The New Punta Gorda SMR provides more protection conforming to MLPA requirements for a network MPA.
MacKerricher SMCA			Remove	The current SMCA provided little ecosystem protection and expanding protection or making it meet feasibility guidelines may result in substantial economic and social impacts.
Point Cabrillo SMCA		Included in Pt Cabrillo SMR		Protection was increased and lines were made to conform with DFG feasibility guidelines. Research area for goal 3.
Russion Gulch SMCA			Remove	The current SMCA provided little ecosystem protection and expanding protection or making it meet feasibility guidelines may result in substantial economic and social impacts.
Van Damme SMCA			Remove	The current SMCA provided little ecosystem protection and expanding protection or making it meet feasibility guidelines may result in substantial economic and social impacts.

SMR = State Marine Reserve, SMCA = State Marine Conservation Area

Table 1. Regulation summary for existing state MPAs in the north coast study region.

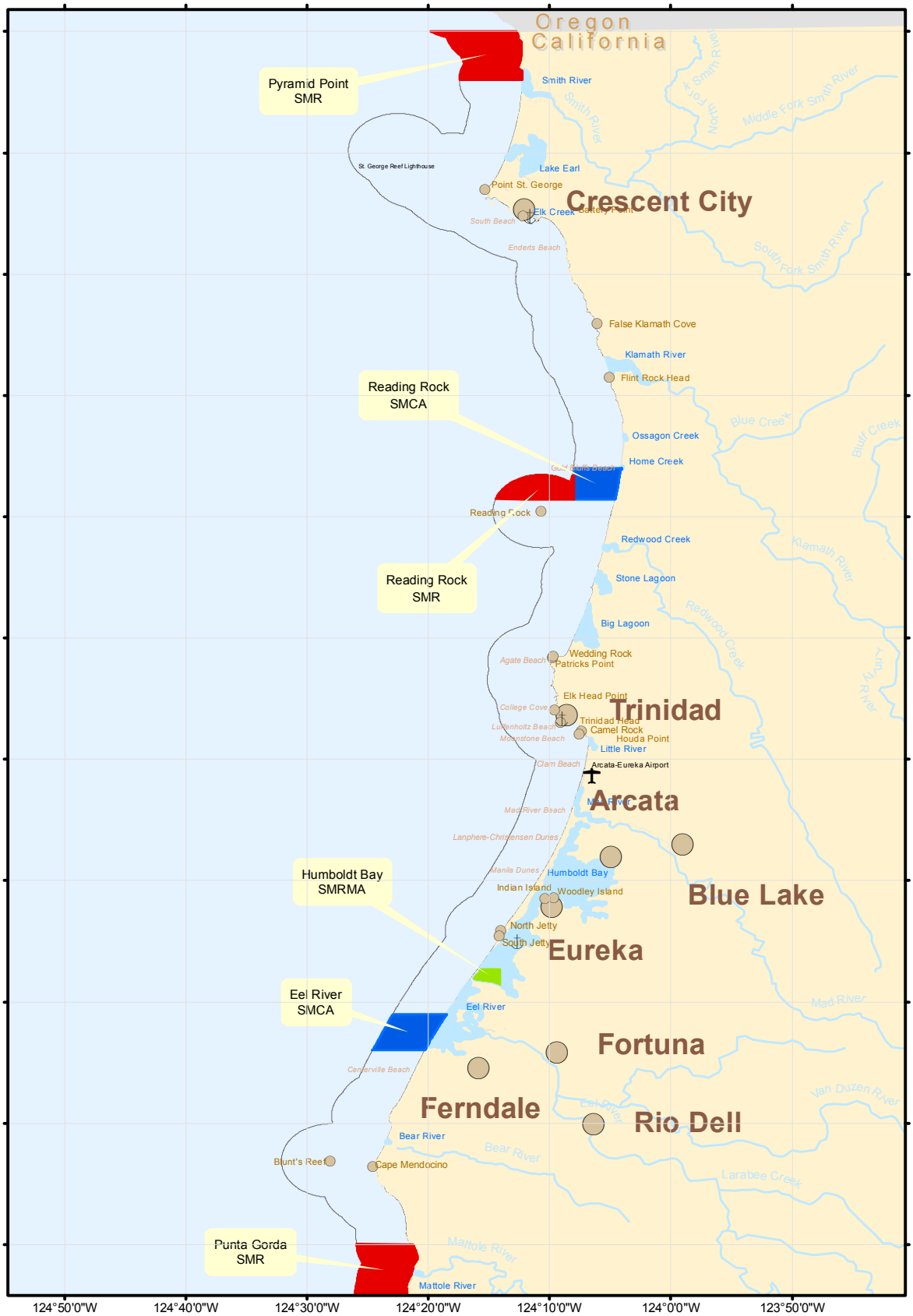
MPA Name	Allowed Take: Recreational	Allowed Take: Commercial	Other Restrictions
Punta Gorda SMR	Take of all living marine resources is prohibited.	Take of all living marine resources is prohibited.	Other restrictions exist regarding: swimming, boating, firearms, public entry, pesticides, herbicides and other regulated chemicals, litter, aircraft, pets, potential memorandums of understanding, and scientific research.
MacKerricher SMCA	Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels.	Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, squid, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None
Point Cabrillo SMCA	None	Finfish and marine aquatic plants.	None
Russian Gulch SMCA	Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels.	Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None
Van Damme SMCA	Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels.	Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None

Table 2. Boundaries for existing state MPAs in the north coast study region.

MPA Name	Boundaries
Punta Gorda SMR	This area is bounded by the three-fathom inshore depth contour, the 30- fathom depth contour and the following points: 40o 16.43' N. lat. 124o 22.00' W. long.; 40o 16.43' N. lat. 124o 23.50' W. long.; 40o 14.83' N. lat. 124o 23.18' W. long.; and 40o 15.23' N. lat. 124o 21.62' W. long.
MacKerricher SMCA	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 29.81' N. lat. 123o 47.50' W. long.; 39o 29.95' N. lat. 123o 47.80' W. long.; 39o 27.62' N. lat. 123o 48.80' W. long.; and 39o 27.55' N. lat. 123o 48.52' W. long.
Point Cabrillo SMCA	This area is bounded by the mean high tide line, a distance of 1000 feet seaward of mean lower low water, and the following points: 39o 21.24' N. lat. 123o 49.25' W. long.; 39o 21.33' N. lat. 123o 49.64' W. long.; 39o 20.66' N. lat. 123o 49.68' W. long.; and 39o 20.57' N. lat. 123o 49.27' W. long.
Russian Gulch SMCA	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 19.86' N. lat. 123o 48.84' W. long.; 39o 19.85' N. lat. 123o 48.89' W. long.; 39o 19.52' N. lat. 123o 48.46' W. long.; and 39o 19.52' N. lat. 123o 48.23' W. long.
Van Damme SMCA	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 16.45' N. lat. 123o 47.60' W. long.; 39o 16.355' N. lat. 123o 47.60' W. long.; 39o 16.27' N. lat. 123o 47.545' W. long.; and 39o 16.27' N. lat. 123o 47.43' W. long.

MLPA North Coast Study Region Round 1 - North Coast External Proposed MPA Array B

Northern Bioregion (Oregon/California border to Mattole River)



California Marine Life Protection Act (MLPA) Initiative

0 2.5 5 10 Nautical Miles

0 3.5 7 14 Statute Miles

0 3.5 7 14 Kilometers

N

Date: 16 February 2010

Created by:
Marine Map Cartographic Division, UCSB.

For more information visit:
http://www.northcoast.marinemap.org/marinemap/

marine map

www.marinemap.org

Disclaimer:

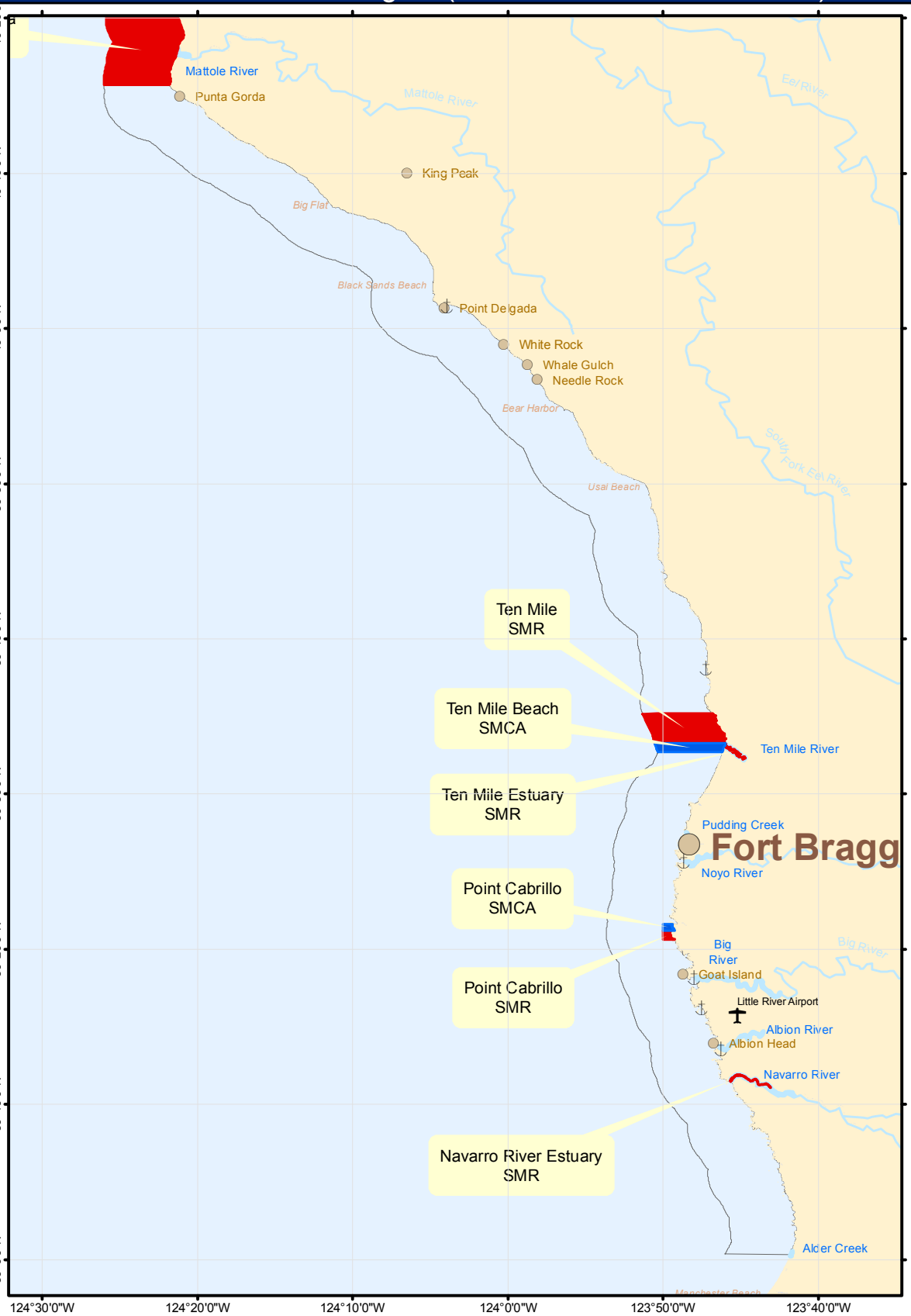
This map represents a proposed external marine protected area (MPA) array that has been submitted by a north coast community group or groups for consideration in the MLPA planning process. This external MPA array is under review; it is NOT a recommendation to the California Fish and Game Commission.

Legend

- North Coast Study Region Boundary
- Proposed Marine Protected Area Array
  - Proposed State Marine Reserve (SMR)
  - Proposed State Marine Conservation Area (SMCA)
  - Proposed State Marine Park (SMP)
  - Proposed State Marine Recreational Management Area (SMRMA)
- Estuaries
- Rivers
- Lighthouse
- Airport
- Coastal Point
- Major City
- Ports

MLPA North Coast Study Region Round 1 - North Coast External Proposed MPA Array B

Southern Bioregion (Mattole River to Alder Creek)



California Marine Life Protection Act (MLPA) Initiative

0 2 4 8 Nautical Miles

0 2.5 5 10 Statute Miles

0 2.5 5 10 Kilometers

N

Date: 16 February 2010

Created by:
Marine Map Cartographic Division, UCSB.

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Legend

- North Coast Study Region Boundary
- Proposed Marine Protected Area Array
  - Proposed State Marine Reserve (SMR)
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  - Proposed State Marine Recreational Management Area (SMRMA)
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- Rivers
- Lighthouse
- Airport
- Coastal Point
- Major City
- Ports

California MLPA North Coast Project
Habitat Calculations for North Coast External Proposed MPA Array B (ExB)
Document Revised on: March 3, 2010

	How Measured	Total Available Habitat	Pyramid Point SMR	Reading Rock SMR	Reading Rock SMCA	Humboldt Bay SMRMA	Eel River SMCA
MPA ID			73881	73883	73882	73884	73885
MPA Designation			SMR	SMR	SMCA	SMRMA	SMCA
Level of Protection			Very high	Very high	Moderate high	Very high	Moderate high
SAT Evaluation Bioregion			Northern	Northern	Northern	Northern	Northern
Area	sq miles	1,027.23	21.28	10.56	9.52	1.84	13.20
Alongshore Span	miles	NA	4.66	2.35	2.98	N/A	3.71
ESI Shoreline	miles	516.66	5.85	0.00	3.04	3.16	3.75
Min Depth	feet	0.00	0.00	90.00	0.00	N/A	0.00
Max Depth	feet	1,667.00	124.00	245.00	101.00	N/A	120.00
Beaches	miles	180.42	4.26	0.00	3.04	0.00	3.75
Rocky Shores	miles	159.08	1.60	0.00	0.00	0.28	0.00
Hardened Shores	miles	22.10	0.00	0.00	0.00	0.00	0.00
Coastal Marsh	miles	88.60	0.00	0.00	0.00	1.90	0.00
Coastal Marsh (area)	sq miles	3.51	0.00	0.00	0.00	0.04	0.00
Tidal Flats	miles	66.46	0.00	0.00	0.00	0.98	0.00
Humboldt Eelgrass	sq miles	7.07	0.00	0.00	0.00	0.57	0.00
Estuary	sq miles	43.49	0.00	0.00	0.00	1.84	0.00
Offshore Rocks	miles	140.73	2.84	0.00	0.00	0.00	0.00
Linear Kelp	miles	52.10	0.00	0.00	0.00	0.00	0.00
Hard (0 - 30m) Proxy	miles	54.01	0.43	0.00	0.00	0.00	0.00
Hard (0 - 30m)	sq miles	42.32	0.99	0.00	0.00	0.00	0.00
Hard (30 - 100m)	sq miles	45.08	0.00	0.01	0.00	0.00	0.00
Hard (100 - 200m)	sq miles	0.99	0.00	0.00	0.00	0.00	0.00
Hard (> 200m)	sq miles	0.09	0.00	0.00	0.00	0.00	0.00
Soft (0 - 30m) Proxy	miles	159.39	4.21	0.00	3.02	0.00	0.00
Soft (0 - 30m)	sq miles	252.26	14.80	0.17	7.91	0.00	0.00
Soft (30 - 100m)	sq miles	420.79	2.53	10.36	0.12	0.00	0.00
Soft (100 - 200m)	sq miles	62.48	0.00	0.00	0.00	0.00	0.00
Soft (> 200m)	sq miles	7.67	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m) Proxy	miles	19.10	0.00	0.00	0.00	0.00	3.77
Unknown (0 - 30m)	sq miles	164.96	2.68	0.00	1.48	1.84	12.17
Unknown (30 - 100m)	sq miles	26.74	0.28	0.02	0.00	0.00	1.03
Unknown (100 - 200m)	sq miles	0.15	0.00	0.00	0.00	0.00	0.00
Unknown (> 200m)	sq miles	0.20	0.00	0.00	0.00	0.00	0.00

California MLPA North Coast Project
Habitat Calculations for North Coast External Proposed MPA Array B (ExB)
Document Revised on: March 3, 2010

	Punta Gorda SMR	Ten Mile SMR	Ten Mile Beach SMCA	Ten Mile Estuary SMR	Point Cabrillo SMCA	Point Cabrillo SMR	Navarro River Estuary SMR
MPA ID	73879	73878	73880	73874	73877	73876	73875
MPA Designation	SMR	SMR	SMCA	SMR	SMCA	SMR	SMR
Level of Protection	Very high	Very high	Moderate high	Very high	Moderate low	Very high	Very high
SAT Evaluation Bioregion	Northern	Southern	Southern	Southern	Southern	Southern	Southern
Area	19.48	8.81	2.67	0.19	0.29	0.30	0.14
Alongshore Span	4.97	2.25	0.67	N/A	0.51	0.69	N/A
ESI Shoreline	5.49	5.03	0.76	3.24	1.95	2.18	1.85
Min Depth	0.00	0.00	0.00	N/A	0.00	0.00	N/A
Max Depth	1667.00	335.00	288.00	N/A	23.00	40.00	N/A
Beaches	3.30	1.20	0.75	0.42	0.00	0.00	0.12
Rocky Shores	2.19	3.83	0.02	0.51	1.95	2.18	0.72
Hardened Shores	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coastal Marsh	0.00	0.00	0.00	2.30	0.00	0.00	0.64
Coastal Marsh (area)	0.00	0.00	0.00	0.05	0.00	0.00	0.01
Tidal Flats	0.00	0.00	0.00	0.00	0.00	0.00	0.36
Humboldt Eelgrass	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Estuary	0.00	0.00	0.00	0.19	0.00	0.00	0.14
Offshore Rocks	0.98	2.44	0.01	0.00	0.89	1.28	0.00
Linear Kelp	0.38	1.86	0.00	0.00	0.45	0.31	0.00
Hard (0 - 30m) Proxy	1.81	0.66	0.00	0.00	0.00	0.19	0.00
Hard (0 - 30m)	1.04	0.38	0.00	0.00	0.12	0.12	0.00
Hard (30 - 100m)	1.43	0.20	0.00	0.00	0.00	0.00	0.00
Hard (100 - 200m)	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Hard (> 200m)	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Soft (0 - 30m) Proxy	3.51	1.59	0.70	0.00	0.00	0.17	0.00
Soft (0 - 30m)	1.46	1.31	0.54	0.00	0.01	0.08	0.00
Soft (30 - 100m)	8.01	6.21	1.84	0.00	0.00	0.00	0.00
Soft (100 - 200m)	2.96	0.10	0.00	0.00	0.00	0.00	0.00
Soft (> 200m)	2.40	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m) Proxy	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m)	1.90	0.62	0.28	0.19	0.16	0.10	0.13
Unknown (30 - 100m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (100 - 200m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (> 200m)	0.02	0.00	0.00	0.00	0.00	0.00	0.00